

San Luis National Wildlife Refuge Complex
P.O. Box 2176
Los Banos, CA 93635
(209)826-3508/ Fax (209)826-1445

MEMORANDUM

July 3, 1997

TO: Assistant Regional Director, ARW
Portland, OR

FROM: Wildlife Biologist (Sande)
San Luis NWR Complex

SUBJECT: Disease Loss Report 1996-1997 (1996 Disease Year)

Enclosed is the 1996-1997 Wildlife Disease Loss Report for the San Luis National Wildlife Refuge (NWR) Complex, Modesto Oxidation Ponds, and Faith/Mapes Ranches near Modesto. A total of 6826 birds suspected of dying from disease were picked up on federal, state, and private lands (Table 1).

There were no disease losses recorded for San Luis NWR or the Arena Plains Unit. However, 4034 birds were recovered on Merced NWR (Table 2). Coots made up 85% (3429) of birds collected. Ten carcasses were sent to the National Wildlife Health Research Center (NWHRC) and lesions of avian cholera were isolated on the livers of 4 specimens; the remaining specimens were saved for training birds. 2733 disease birds were picked up on Modesto Oxidation Ponds from December 10, 1996 to March 3, 1997 (Table 3).

A small disease outbreak affecting Aleutian Canada geese and other waterbirds was documented on the San Joaquin River NWR and the Faith/Mapes Ranches between December 7, 1996 and January 7, 1997. A total of 40 Aleutian Canada geese and 19 other waterbirds (Table 4) were salvaged during this time period. Of these, 5 Aleutians and 3 American coots were shipped to NWHRC for examination; all deaths were attributed to avian cholera. Flooding at the San Joaquin River NWR seemed to have brought an abrupt end to the avian cholera outbreak.

Pick up and disposal of carcasses on federal lands was conducted by San Luis NWR Complex staff; whereas pick-up and disposal on Modesto Oxidation Ponds was handled by appropriate staff.

Table 1. Total number of birds picked up during disease abatement activities on federal, state, and private lands in Merced and Stanislaus counties between December 1996 and March 1997.

<u>Location</u>	<u>Number</u>
Merced NWR	4034
San Joaquin River NWR	59
Modesto Sewer Ponds	2733
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	6826 TOTAL

Table 2. Disease birds picked up on Merced National Wildlife Refuge, Merced County, California, between November 1996 and January 1997.

SPECIES	NUMBER
American Coot	3429
Ross' Goose	267
Snow Goose	118
Northern Shoveler	76
Mallard	37
Gadwall	30
American Wigeon	22
Dowitcher	11
Green-winged Teal	10
Northern Pintail	7
Black-necked Stilt	7
Pied-billed Grebe	5
Red-tailed Hawk	4
White-fronted Goose	2
Snowy Egret	2
Herring Gull	2
Cackling Canada Goose	1
Cinnamon Teal	1
Ruddy Duck	1
Ring-necked Pheasant	1
American Avocet	1
TOTAL	4034

Table 3. Disease birds picked up on Modesto Sewer Ponds, Stanislaus County, California, between December 1996 and March 1997.

<u>SPECIES</u>	<u>NUMBER</u>
American Coot	2014
Ruddy Duck	642
Gulls	34
Northern Shoveler	27
Unidentified	11
Canada Geese	4
Pied-billed Grebe	1
<u>TOTAL</u>	<u>2733</u>

Table 4. Waterfowl collected at San Joaquin River National Wildlife Refuge, Stanislaus County, California, December 1996 to January 1997*.

SPECIES	NUMBER
Aleutian Canada Goose	40
American Coot	12
Cackling Canada Goose	1
White-fronted Goose	1
Mallard	1
Northern Pintail	1
Northern Shoveler	1
Ring-necked Duck	1
Unidentified CAGO	1
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TOTAL	59

*Flooding seemed to have put an end to the cholera epizootic, as mortality soon ended when water levees exceeded natural impoundments and covered the entire refuge. This observation was made by M. Fisher, goose observer at San Joaquin NWR.

Appendix 1. Disease pick-up form from San Joaquin River National Wildlife Refuge, Stanislaus county, California.

DATE	SPECIES	# PICKED-UP	# SAVED	LOCATION	COLLECTOR	SUSPECTED CAUSE OF DEATH	COMMENTS
11/3/96	ACG	1	1	Page Lake, SJRNWR	M. Fisher	Golden eagle predation	Located, small puncture wound under left wing.
11/7/96	ACG	0	0	Dairy Field, SJRNWR	M. Fisher	Observed eagle predation	Watched adult G. eagle take HY female ACG.
11/22/96	ACG	0	0	Page Lake, SJRNWR	M. Fisher	unknown	Mostly feather pile, but saw white neck ring.
11/30/96	ACG	0	0	Page Lake, SJRNWR	M. Fisher	unknown	Found dead ACG on a roost island in Page Lake.
12/2/96	ACG	1	0	Page Lake, SJRNWR	M. Fisher	unknown	Found partially consumed ACG in Page lake.
12/7/96	Mallard	1	1	Page Lake, SJRNWR	M. Fisher	Possible plumbism	Bird alive emaciated, lethargic.
12/16/96	ACG	0	0	Faith Ranch	M. Fisher	Golden eagle confirmed	Eagle to a AHY male in Faith corn.
12/18/96	ACG	1	0	Page Lake, SJRNWR	M. Fisher	unknown	ACG nearly all consumed by bird.
12/20/96	Small Canada goose	0	0	Dairy Field, SJRNWR	M. Fisher	unknown	Bird appeared to be consumed by mammal.
12/23/96	ACG	4	4	Page Lake, SJRNWR	M. Fisher	Avian cholera	First of year cholera, ACG number 8-11
12/23/96	Coots	5	3	Page Lake, SJRNWR	M. Fisher	Avian cholera	Coots with cholera found dead.
12/24/96	ACG	2	1	Page Lake, SJRNWR	M. Fisher	Avian cholera	Bird found 1 alive, 1 dead.

DISEASE PICK-UP FORM

DATE	SPECIES	# PICKED-UP	# SAVED	LOCATION	COLLECTOR	SUSPECTED CAUSE OF DEATH	COMMENTS
12/24/96	Ring-necked duck	1	1	Page Lake, SJRNWR	M. Fisher	Avian cholera	AHY female found dead.
12/24/96	Coots	2	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	Both birds found dead.
12/26/96	ACG	6	0	Page Lake, SJRNWR	J. Ross, M. Fisher	Avian cholera	all birds found dead, one fully consumed.
12/26/96	N. Shoveler	1	0	Page Lake, SJRNWR	J. Ross, M. Fisher	Avian cholera	Found dead
12/26/96	N. Pintail	1	0	Page Lake, SJRNWR	J. Ross, M. Fisher	Avian cholera	Bird breast consumed.
12/27/96	ACG	3	0	Page Lake, SJRNWR	J. Ross, M. Fisher	Avian cholera	Birds found dead.
12/27/96	Coots	2	0	Page Lake, SJRNWR	J. Ross, M. Fisher	Avian cholera	
12/28/96	ACG	2	0	Page Lake, SJRNWR	J. Ross	Avian cholera	Both birds found dead, partially eaten.
12/28/96	ACG	1	0	Page Lake, SJRNWR	M. Fisher, J. Ross	Hunter shot, broken wing	Bird found alive, caught by dog.
12/29/96	ACG	3	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	Birds found dead, 2 breasts consumed, 1 found whole.
12/31/96	ACG	4	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	All birds except 1 found partially consumed.
12/31/96	Coot	1	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	Bird found whole.

DISEASE PICK-UP FORM

DATE	SPECIES	# PICKED-UP	# SAVED	LOCATION	COLLECTOR	SUSPECTED CAUSE OF DEATH	COMMENTS
1/3/97	ACG	4	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	All birds found whole.
1/3/97	Coot	1	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	Found whole, first sunny day in 1 week.
Flood ERA							
1/17/97	ACG	1	0	Page Lake, SJRNWR	M. Fisher	Possible hunter shot, wing infraction.	Access to Page Lake by ATV only.
1/21/97	ACG	1	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	First sign of cholera in nearly 2 ^{1/2} weeks.
1/24/97	Coot	1	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	Water levels rising to flood stage.
1/24/97	White-front SY	1	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	As of 6 Jan cholera will most likely be diluted.
1/27/97	ACG	1	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	Found dead
1/27/97	ACG	1	0	Cambell's	M. Fisher	Avian cholera	Found dead
1/29/97	Cackling CG	1	0	Page Lake, SJRNWR	M. Fisher	Avian cholera	Found dead
Area Flooded							

USGS-BIOLOGICAL RESOURCES DIVISION
NATIONAL WILDLIFE HEALTH CENTER

6006 Schroeder Road
Madison, Wisconsin 53711-6223
608-271-4640 (FAX 608-264-5431)

DIAGNOSTIC SERVICES CASE REPORT

Case: #14659, 001-009

Epizoo: #96-168

RHT: LCG

Submitter:

Mark Fisher
San Luis NWR
P.O. Box 2176
Los Banos, CA 93535

Specimen description/identification:

001-005 Aleutian Canada Geese,
006-008 American Coots,
009 Mallard.

Date Submitted: 01/23/96

Location: Page Lake on the San Joaquin River
NWR, Stanislaus Co., CA.

General Diagnosis: 001-008: Avian cholera
009: Lead poisoning

Comments: Avian cholera was confirmed by isolation of *Pasturella multocida* from each bird. Liver lead concentration in the mallard was severely elevated (40 ppm, wet wt.).

X Final Report (02/11/97)
date

_____ See attached necropsy records for individual specimen observations.

Note: Copies of this report have been sent to:

X USFWS Regional Office (RO-1)

Attention:

X Migratory Bird Coordinator

___ F & W Enhancement: Endangered Species

___ F & W Enhancement: Environmental Contaminants Coordinator

X USFWS, F & W Enhancement, Anchorage AK (Attn: B. Anderson)

N. J. Thomas
Pathologist: Nancy J. Thomas, DVM, MS
Diplomate, American College of Veterinary Pathologists

Linda C. Glaser DVM

If you have questions regarding this case, contact: Linda C. Glaser, DVM
at 608-271-4640. Include above Case Number. Diagnostic findings may not be used for publication without the pathologist's knowledge and consent.

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NATIONAL WILDLIFE HEALTH CENTER
6006 Schroeder Road
Madison, Wisconsin 53711-6223
608-271-4640 (FAX 608-264-5431)

DIAGNOSTIC SERVICES CASE REPORT

Case: #14670, 001-010

Epizoo: #96-168

RHT: LCG

Submitter:

Dennis Wollington
San Luis NWR
P.O. Box 2176
Los Banos, CA 93635

Specimen description/identification:

Ross Goose, Coot, Dowitcher, Shoveler, Green-winged Teal.

Date Submitted: 01/29/97

Location: Merced NWR, Merced Co., CA.

General Diagnosis: Avian cholera: 001, 004, 007, 008.

Not necropsied: 002, 003, 005, 006, 009, 010.

Comments: Avian cholera was diagnosed in the Ross' goose, coot, dowitcher and Norther shoveler. Although lesions of avian cholera were minimal in the coot and dowitcher, *Pasteurella multocida* was isolated from all of the livers of these birds as well as the intestine and bone marrow when sampled. The remaining carcasses were saved as training birds.

X Final Report (02/07/97)
date

_____ See attached necropsy records for individual specimen observations.

Note: Copies of this report have been sent to:

X USFWS Regional Office (RO-1)

Attention:

X Migratory Bird Coordinator

___ F & W Enhancement: Endangered Species

___ F & W Enhancement: Environmental Contaminants Coordinator



Pathologist: Carol U. Meteyer, DVM

Diplomate, American College of Veterinary Pathologists



Linda C. Glaser, DVM

If you have questions regarding this case, contact: Linda C. Glaser, DVM
at 608-271-4640. Include above Case Number. Diagnostic findings may not be used for publication without the pathologist's knowledge and consent.